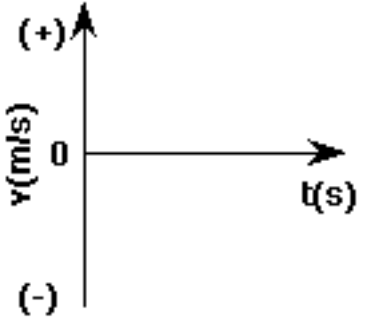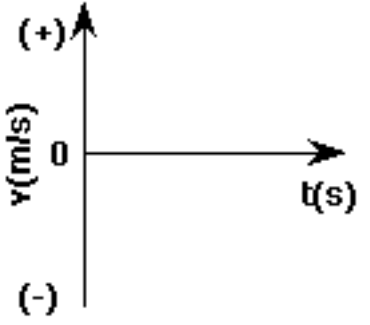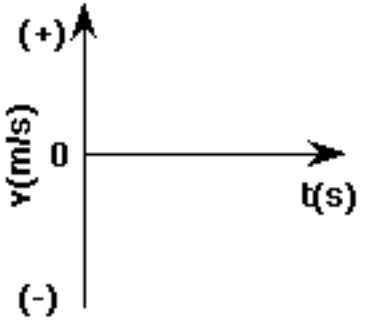Name _____ Period _____ Date _____

UNIT 1: WORKSHEET 10

Complete all work **on a separate sheet of paper**, make the graphs qualitative, and write the answers in the "Solution" box.

The problem	**v** vs **t** graph	Solution
1. A poorly tuned Yugo can accelerate from rest to a speed of 28 m/s in 20 s. a) What is the average acceleration of the car? b) What distance does it travel in this time? c) What is the average velocity?	(+) ↑ V(m/s) 0 ————→ t(s) (-)	a) b) c)
2. At t = 0 a car has a speed of 30 m/s. After 6 s, its speed is 14 m/s. a) What is its average acceleration during this time interval? b) What is the average velocity?	(+) ↑ V(m/s) 0 ————→ t(s) (-)	a) b)
3. A bear spies some honey and takes off from rest, accelerating at a rate of 2.0 m/s^2. a) If the honey is 16 m away, how fast will his snout be going at the moment of ecstasy? b) What is the average velocity?	(+) ↑ V(m/s) 0 ————→ t(s) (-)	a) b)
4. A bus moving at 20 m/s (t = 0s) slows at a rate of 4 m/s each second. a) How long does it take the bus to stop? b) How far does it travel while braking? c) What is the average velocity?	(+) ↑ V(m/s) 0 ————→ t(s) (-)	a) b) c)

5. A car whose initial speed is 30 m/s slows uniformly to 10 m/s in 5 seconds. a) Determine the acceleration of the car. b) Determine the distance it travels from 0 to 3 seconds.	(+)↑ Y(m/s) 0 ————→ t(s) (-)	a) b)
6. A dog runs down his driveway with an initial speed of 5 m/s for 8 s, then uniformly increases his speed to 10 m/s in 5 s. a) What was his acceleration during the 2nd part of the motion? b) How long is the driveway assuming the dog reaches the end of the driveway in 13s?	(+)↑ Y(m/s) 0 ————→ t(s) (-)	a) b)
7. A physics student standing on a hill decides to ski down the hill, accelerating at a constant 2.0 m/s². If it takes her 15 s to reach the bottom, what is the length of the slope	(+)↑ Y(m/s) 0 ————→ t(s) (-)	
8. A mountain goat starts a rock slide and the rocks crash down the slope 100 m. If the rocks reach the bottom in 5 s, what is their acceleration? Assume the rocks started at rest.	(+)↑ Y(m/s) 0 ————→ t(s) (-)	